

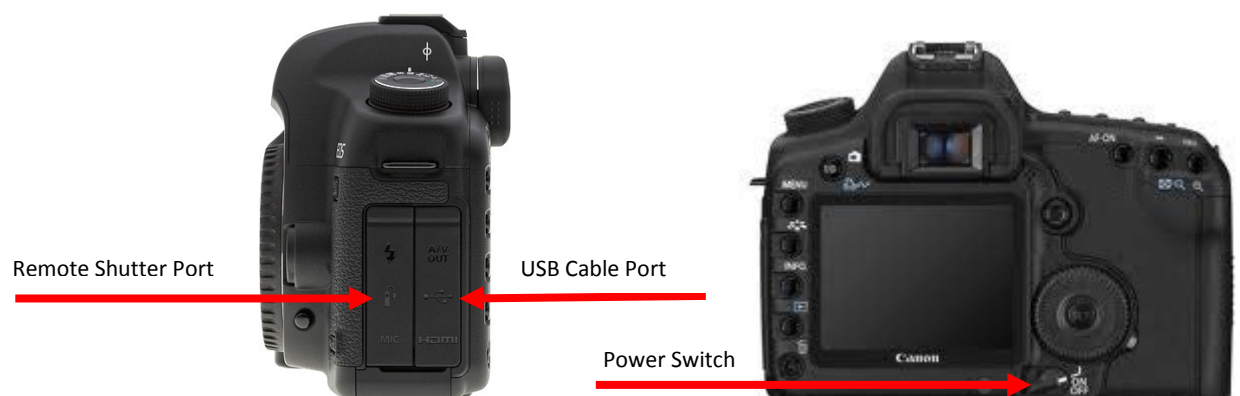
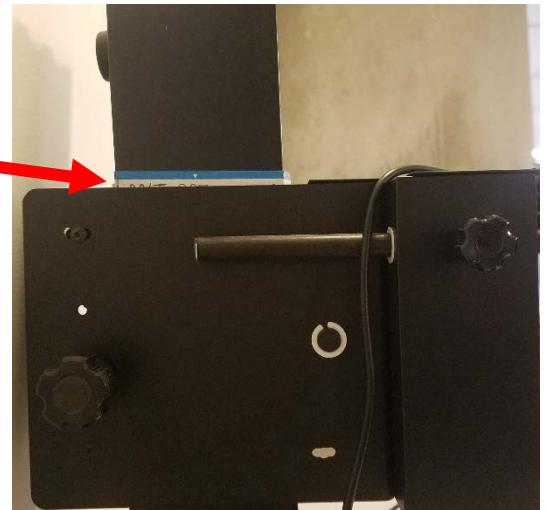
KHD Specimen Imaging Protocol

Equipment

- Laptop with EOS Utility and Digital Photo Professional Installed (Blue)
- Barcode Scanner
- Imaging Soft Box
- Camera (Canon EOS 5D Mark II)
- Copy Stand and Lights
- Remote Shutter
- Ethernet cable
- Camera USB cable
- Laptop power cable
- Camera power cable
- Color/Scale Bar

Step 1: Set Up Imaging Station

- Adjust camera height on copy stand to align top of arm with middle of PLANT label
- Level camera on mount
- Connect camera to laptop with USB cable
- Connect barcode scanner USB to laptop
- Connect laptop to internet Ethernet cable
- Connect remote shutter to camera
- Connect laptop to power source
- Connect Camera to power source
- Power on copy stand lights
- Power on laptop
- Power on camera
- Remove lens cap



Step 2: Set Up Computer

- Open EOS Utility software
- From the opening dialog window, select “**Camera settings/Remote shooting**”
 - If this option is unavailable, make sure the camera is on
- Adjust camera settings as follows
 - Shutter Speed set to $\frac{1}{4}$
 - F-Stop set to **F10**
 - ISO set to **250**
 - Image Format set to **RAW**



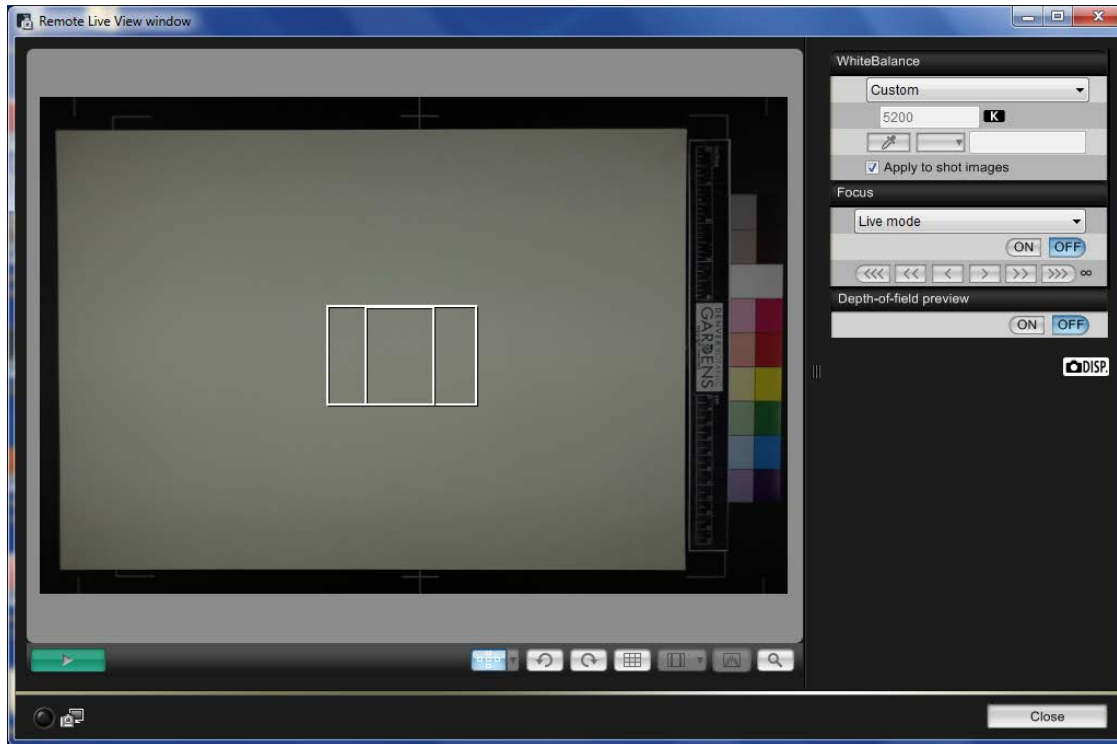
EOS Utility

- Set the destination folder where images are to be placed once created as **Q:\Research\Images(new)\MuseumSpecimens\KHD\To_Be_Converted**

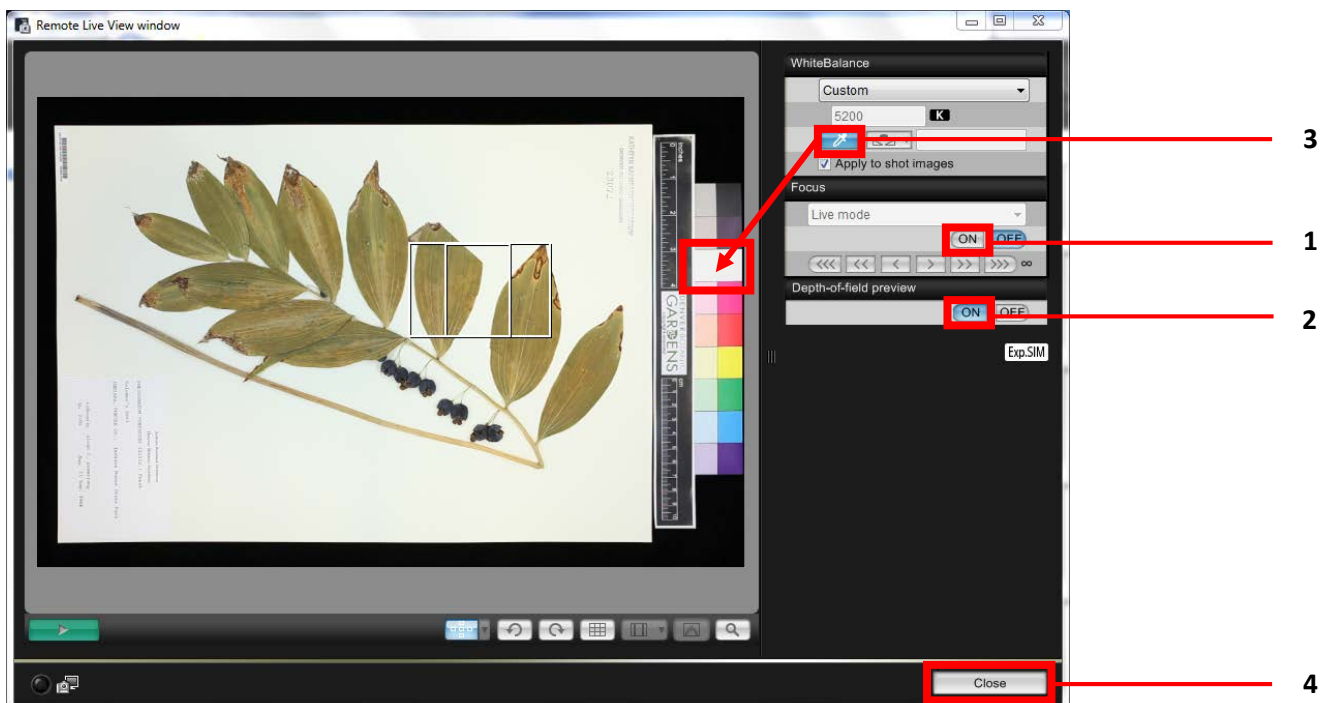


Step 3: Stage specimen and adjust placement

- Place and align a specimen on top of the weighted manila sheet
- Place color/scale bar above specimen and center
- Click on “Remote Live View shooting”
- A new window will open that displays the camera’s field of view
- Align specimen and color/scale bar to be centered and have black space around all sides (see image below)



- Once the specimen is aligned
 1. Switch the Focus to ON
 2. Switch the depth of field preview to ON
 3. Select the White Balance eye-dropper and click on the white portion of the color bar
 4. Close the live view window

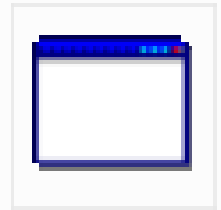


Step 4: Set Up Renaming Application

- Open FNIntercept found here: **Q:\Research\All Herbaria\FNIntercept.exe**
- Click *Run* should a dialog box appear
- Click *Select New Image Folder* and navigate to the destination folder where image: are sent once they are created:

Q:\Research\Images(new)\MuseumSpecimens\KHD\To_Be_Converted

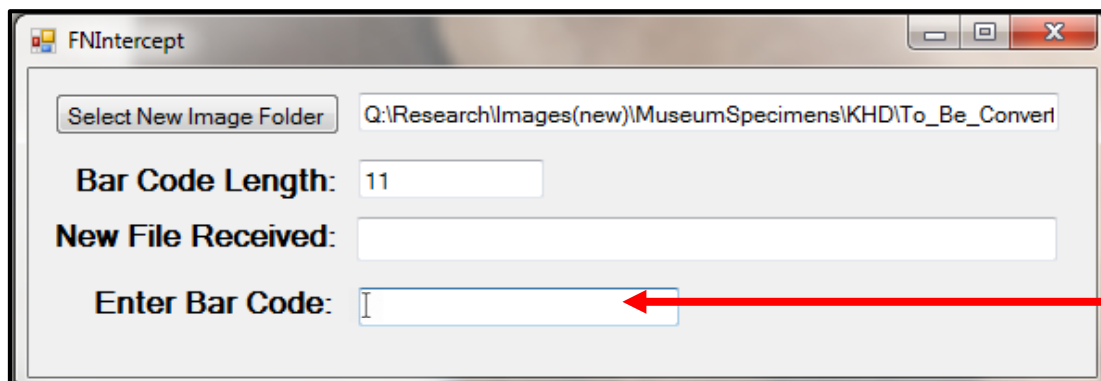
- Enter **11** as the *Bare Code Length* (KHD#####)
- Then place the cursor and click in the space to the right of *Enter Bar Code*



FNIntercept

Learn More

FNIntercept is a custom built script that will rename an incoming file with the provided value. Gil Nelson from iDigBio wrote and provided the script.



The screenshot shows the FNIntercept application window. It has a title bar with the text 'FNIntercept'. Inside the window, there is a 'Select New Image Folder' button followed by a text box containing the path 'Q:\Research\Images(new)\MuseumSpecimens\KHD\To_Be_Convert'. Below this, there is a 'Bar Code Length:' label followed by a text box containing the number '11'. Underneath that is a 'New File Received:' label followed by an empty text box. At the bottom, there is an 'Enter Bar Code:' label followed by an empty text box. A red arrow points to the 'Enter Bar Code' text box from the right, with the text 'Place and keep cursor here' next to it.

Place and keep cursor here

You are now ready to shoot an image

Step 5: Capturing Images

- Make sure that FNIntercept is open and is selected (curser is active in *Enter Bar Code* field)
- Push button on remote shutter ½ way down and listen for a chirp
 - The chirp means that the camera is in focus
 - If the camera is unable to focus, follow the instructions in the box on the right side of this page
- Once the camera is focused on the specimen, press the button on the remote shutter completely to capture an image
 - The first time an image is captured in a session, Digital Photo Professional will automatically open. This allows for the image to be previewed, leave the program open
- After an image is captured, look for the temporary file name to appear in the FNIntercept's *New File Received* field
- Without clicking the computer's mouse outside of the FNIntercept window, scan the barcode on the specimen
- The *New File Received* field should re-populate with the barcode that was scanned, thus renaming the incoming file
 - Double check that the new image was renamed by looking at the thumbnails in Digital Photo Professional
- Open a preview of the new image in Digital Photo Professional
 - Check that the image is in focus, double click to zoom
 - Hover the cursor over the white block on the color bar. The RGB values at the bottom of the screen should all be within 3 of 240

When the camera will not focus, it is usually the case that there is nothing on the field of view for the camera to focus on. To solve this, gently place the focusing card (pictured below) on top of the herbarium specimen. Focus the camera by pressing the remote shutter button ½ way. Once the camera is focused, remove the focusing card and capture the image.



Hold cursor here

RGB Values

Step 6: Finishing a Session

Once a session of imaging has been completed, consult the [KHD_SpecimenImaging_Workflow](#) for instructions on where to place specimens that have been imaged. Shut down laptop, turn off camera, and put everything away in its right place.